

# Mental health discourses on Twitter during Mental Health Awareness Week

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## Abstract

Promoting health-related campaigns on Twitter has increasingly become a world-wide choice to raise awareness and disseminate health information. Data retrieved from Twitter are now being used to explore how users express their views, attitudes and personal experiences of health-related issues. We focused on Twitter discourse reproduced during Mental Health Awareness Week 2017 by examining 1,200 tweets containing the keywords ‘mental health’, ‘mental illness’, ‘mental disorders’ and ‘#MHAW’. The analysis revealed ‘awareness and advocacy’, ‘stigmatization’, and ‘personal experience of mental health/illness’ as the central discourses within the sample. The article concludes with some recommendations for future research on digitally-mediated health communication.

## Introduction

*Mental health is a dynamic state of internal equilibrium which enables individuals to use their abilities [such as] basic cognitive and social skills; ability to recognize, express and modulate one's own emotions, as well as empathize with others; flexibility and ability to cope with adverse life events and function in social roles; and harmonious relationship between body and mind* (Galderisi et al., 2015, pp. 231–232).

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The definition and conceptualization of ‘mental health’ has significantly evolved in recent years; moving away from being equated with the absence of mental illness to positive emotions and positive functioning (e.g. ability to work productively) (Keyes, 2014). As the quote above illustrates, Galderisi et al.’s (2015) proposed definition is flexible and inclusive of a variety of lived-experiences of mental health. This is a theoretical perspective on mental health; in everyday interactions there are different views of mental health, which are often entangled in negative discursive practices (e.g. exclusion, stigmatization).

According to the World Health Organization, mental health illnesses are a major global problem. For instance, around 264 million people worldwide are affected by depression, about 45 million people by bipolar affective disorder, whereas 50 million people are affected by dementia and 20 million people by schizophrenia and other psychoses, and there are around 800,000 deaths from suicide every year. Despite the severity of the situation, people with mental health conditions are prone to be stigmatized, discriminated against and subjected to human rights violations (WHO, 2019a, 2019b), making it less likely for them to seek help or talk about their mental health issues.

Social media provides a public platform for people to discuss difficult social issues, including mental health-related communication, as it may reduce some of the negative connotations of face-to-face interaction (Jamison-Powell et al., 2012). This allows people with illnesses to find peer support and advice (Koteyko & Atanasova, 2018; Naslund et al., 2014) and raise awareness to combat stigma towards mental illnesses (Berry et al., 2017; Sampogna et al., 2017). Twitter in particular appears to offer its users a ‘safe’ space to openly share health-related content in the form of comments, news, images, audios and videos (Lee et al., 2014; McNab, 2009), in comparison to other social media platforms, such as Facebook (Berry et al., 2017; Park et al., 2013).

From a researcher's perspective, given that Twitter allows users the option to remain anonymous (Joseph et al., 2015; Zaydman, 2017), it offers a practical and non-intrusive way to collect mental health discourse texts, including about discriminatory and stigmatizing language. The aim of this article is to identify the predominant mental health discourses on Twitter. This is based on a random sample of 1,200 tweets posted during the Mental Health Awareness Week campaign held in May 2017 through four keywords: 'mental health', 'mental illness', 'mental disorders' and '#MHAW'.

## **Study Background**

### ***Mental health awareness campaigns***

For the last two decades, there has been an international effort to promote awareness of mental health issues. For instance, in the United States of America (USA) Mental Illness Awareness Week coincides with World Mental Health Day, and in the United Kingdom (UK), since 2001 the Mental Health Foundation has organized a Mental Health Awareness Week (MHAW) every May with a different theme. A wide variety of events are conducted during MHAW to educate the public, provide support and advocate for policy change (see Mental Health Foundation, 2019). More specific mental health initiatives include Maternity Mental Health Awareness Week, Depression Awareness Day and National Day without Stigma. Awareness campaigns seem to encourage communication between society, health professionals and people experiencing mental health issues, particularly on Twitter (McClellan et al., 2017).

According to Berry et al. (2017), Twitter offers the opportunity to raise awareness and challenge stigma, as well as a safe space for sharing experiences, exercising empowerment, and developing a sense of community. Arguably, people who have greater knowledge about or have had close experience with mental illness are less likely to stigmatize (Corrigan et al., 2001). Some studies

have proved that awareness campaigns are positively associated with greater knowledge, more favorable attitudes and intended behavior (Evans-Lacko et al., 2013). Thus, public awareness interventions and an increase of social interaction with people experiencing mental illness appear to be sensible strategies to reduce mental health-related stigma and discrimination (Corrigan et al., 2001; Gaebel et al., 2002; Griffiths et al., 2006).

### ***Twitter as a source of mental health discourse***

Twitter is a popular social networking site (SNS) with 166 million daily active users worldwide (Statista, 2020) who use the platform mainly to talk about day-to-day activities, share opinions and report news (Java et al., 2007). Health-related organizations use Twitter for public health advice dissemination, to create public engagement and for community-building purposes (Dumbrell & Steele, 2013; Thackeray et al., 2013). In terms of research, Twitter has been used to explore online conversations about a variety of mental health-related topics, such as insomnia (Jamison-Powell et al., 2012), dementia (Robillard et al., 2013), eating disorders (Pereira et al., 2016), depression (Cavazos-Rehg et al., 2016; Lachmar et al., 2017), schizophrenia (Joseph et al., 2015) and suicide (Hswen et al., 2018; O'Dea et al., 2015; Schlichthorst et al., 2018).

Language is central to the ways people make sense of and talk about health and illness. To understand how individuals experience and live with illnesses, sociologists have long documented illness narratives through traditional research methods (e.g. face-to-face interviews; autobiographies) (Bury, 2001; Charmaz, 2002). Twitter offers additional possibilities for exploring how people make meaning in relation to health and illness issues. Awareness campaigns, for instance, “[...] capitalise on the potential of [Twitter users’] stories to bring the listeners into the private world of the storyteller and reveal subjective experiences.” (Koteyko & Atanasova, 2018,

p. 53) while also connecting such private stories to a public audience, potentially increasing social activism and affecting social change (see Jones, 2015).

Twitter offers a relatively anonymous way to communicate, and potentially this allows for a less biased, *naturalistic* account of individuals' experiences from a wider population of people who otherwise may not participate in research (Lachmar et al., 2017). Thus, Twitter offers a practical and less intrusive way to gain insights into mental health discourse from people experiencing mental illness and the general public (Reavley & Pilkington, 2014), as it may be charged with discriminatory and stigmatizing language. Contributing to the emerging literature on discourse in SNSs (e.g. Koteyko & Atanasova, 2018; Veum & Undrum, 2018), we focus on how Twitter users talk about mental health during MHAW, based on the relationship between discourse and society and the notion that variations in discursive practices often underpin broader social and cultural practices (see Wodak & Meyer, 2015). Thus, our study is guided by one research question: Which mental health discourses are featured in MHAW tweets?

## **Methodology**

### ***Data collection***

The texts analyzed in this study are from an initial sample of 181,565 tweets collected during MHAW (8-14 May 2017). We collected the tweets using Mozdeh (<http://mozdeh.wlv.ac.uk/>) and a search strategy of mental health-related terms, which included the hashtag #MHAW and four keywords: 'mental health', 'mental illness', 'mental disorders', and 'severe mental disorders' - although ultimately the 'mental disorders' and 'severe mental disorders' results were merged. After cleaning the data of spam, duplicates and retweets, the final sample consisted of 100,034 tweets

(Table 1). Whilst there were considerable differences in the number of tweets for each keyword/hashtag, we selected comparable sample sizes (i.e. 300 tweets for each keyword/hashtag) to work with a balanced dataset of 1,200 random English-language tweets to maximize the potential for comparisons (Kim et al., 2018).

[insert Table 1 about here]

### ***Ethical considerations***

As a public and widely accessible platform, public tweets do not require informed consent to analyze, unlike standard research projects involving human subjects (Bruckman, 2002; Williams et al., 2017). This applies only to public tweets (as collected here): users with private profiles are inherently protected from being subject to research. According to the Association of Internet Researchers' ethical guidelines (Franzke et al., 2020), biographical information contained within tweets that may allow specific users to be identified (e.g. @handles, URLs) have been removed from tweets reported in this article, except for those belonging to institutions and public figures (see Townsend & Wallace, 2016). Furthermore, to ensure respect of users' privacy we paraphrased quoted tweets (except from institutions and public figures), checking that none retrieved identifiable information when entered into search engines (see Tromble & Stockmann, 2017).

### ***Data analysis***

Our analysis follows a multimodal approach since tweets can contain embedded media, such as images, emojis, video, audio, links to external websites, and other tweets within conversational threads (Goodman & Light, 2016). Analyzing embedded elements helps to contextualize the tweets. We applied Content Analysis (CA) within a Discourse Analysis (DA) approach (see Hardy

et al., 2004), in keeping with a social constructionist paradigm. These two methods complement each other well as they are both concerned with examining the nature of language; thus this methodological combination allows for a systematic and nuanced analysis of the data, ‘in which meaning cannot be separated from social context and any attempt to count and code must include a sensitivity to the usage of words.’ (blinded ref). According to current health and social media discourse research, this approach combines the inductive rigor of empirical analysis with a deductive focus on ideological issues, through both macro and micro levels of discourse (Gray Brunton et al., 2014). While our focus lies on examining and interpreting the meanings conveyed in tweets and constructed within the broader societal context (Wodak & Meyer, 2015), with our coding framework we are able to count occurrences of meanings, to then try and find patterns and ultimately elaborate on dominant discourses of mental health on Twitter and how these relate to our reality (social, economic, political context). Furthermore, our final sample had to be sensibly manageable (i.e. relatively small) in order to apply ‘human coding’. This methodological decision stems from the fact that computer-aided analysis is still not capable of capturing nuanced meanings within tweets, and so *contextual sensitivity* can only be attained through the rigor of manual coding (see Kim et al., 2018).

### ***Phases of Analysis***

Our approach to data analysis was inductive; first we used an open-coding approach to allow themes and categories to be generated directly from the data – albeit with existing empirical research and theoretical work providing ideas for what to look for and the research question providing an initial frame. As is common in qualitative research, the first author read and re-read a random sample of 180 tweets to get familiarized with the tweets content while a code was applied to each tweet, which resulted in an initial coding framework of 16 categories. These categories

were then organized and described in detail and overarching discourses were identified (e.g. mental health as medical condition; mental health as a social issue; mental health as a personal issue). The research team members subscribe to different scientific fields (i.e. sociology, mathematics and information science), which may impact our analysis, so we held several and lengthy discussions of the generated themes leading to a refinement and consensus on the definition of each code. We also added the variables 'Location'; 'Type of Account'; 'Sentiment' and 'Mention of Mental Illness/Mental Disorders (MI/MD)' to the coding framework to classify Twitter users' characteristics and how these relate to identified discourses.

Subsequently, [authors initials] independently conducted a pilot study of 120 random tweets to assess the applicability of the coding framework and to possibly identify new codes; we then collated the pilot data and discussed tweet coding disagreements until a consensus was reached. We did not identify any new themes when this first pilot dataset was analyzed, and few discourses were modified (Table 2). Then, [authors initials] independently coded second and third pilot samples while also undertaking further coding training in order to increase reliability. At this stage, the variable 'Gender' was added to the coding framework (Appendix 1) before final inter-coding was conducted. Next, [authors initials] independently coded a random selection of 10% of the total sample (120 tweets). The inter-coder reliability analysis across all variables resulted in a Cohen's Kappa range from 0.65 (moderate agreement) to 0.85 (strong agreement). Coding not only the text of each tweet, but the embedded data might have resulted in greater inconsistencies between coders' interpretation of the content. Although 'Discourse' and 'Sentiment' are the most subjective categories in our analysis, we reached moderate agreement on them. In contrast, the lower agreement on 'Type of Account' could be the result of some accounts being changed, suspended or deleted at the time of each independent coding.



[insert Table 2 about here]

Finally, the first and second authors then completed the coding of the final sample of 1,200 tweets; [first author initials] undertook the classification of the variables ‘Discourse’, ‘Sentiment’ and ‘Mention of MI/MD’, whereas [second author initials] classified ‘Location’, ‘Gender’ and ‘Type of Account’ and the two coders reviewed each other’s coding upon completion. Any disagreements between the two were reflected upon individually and later discussed and resolved.

We also calculated descriptive statistics to tabulate tweets by their discursive content and the remaining variables; statistically significant differences between the proportion of discursive content across the other variables were calculated using a Monte Carlo approximation to Fisher’s exact tests rather than chi-square tests because many cells had expected values below 5, and standard Fisher’s exact tests are slow for the large tables involved. The tests were conducted by tweet rather than by user, giving greater weight to more active users.

## **Results**

### ***Tweets Overview***

The 1,200 tweets analyzed were posted by 1,130 unique Twitter users; most (95.7%) contributed one tweet. The tweets were posted from 50 different countries, with the UK (358/1130, 31.7% users) and the USA (231/1130, 20.4% users) as the two main locations from where most unique users originated (Appendix 2). There was a statistically significant relationship between the variables discourse and location (Fisher’s exact test,  $p < .001$ ,  $n = 735$ ), which showed that users from the UK were more likely to tweet about *Awareness & Advocacy* (193 tweets), and *Personal*

*Experience of MH/MI* (54 tweets) than the other countries, whereas tweets from the USA were relatively more likely to be about mental health *Stigmatization* (46 tweets).

Unique users tweeting about mental health during MHAW were from the general public (47%), other professionals (i.e. not health-related, journalists or politicians) (10%), other organizations (8%), not-for-profit organizations (7%) and health professionals (6%) (Appendix 3). There was a statistically significant relationship between discourse and type of account (Fisher's exact test,  $p < .001$ ). Personal accounts were statistically more likely to tweet about *Awareness & Advocacy* (179), *Stigmatization* (102), and *Personal Experience of MH/MI* (94) and less about *Treatment* (2) and *Research Activities* (4). Other professionals/organizations were statistically more likely to tweet about *Awareness & Advocacy* (98) than any other topic.

After manual coding of the Twitter account description or pronouns, 357 of the unique users were categorized as female and 188 as male, whereas most (51.77%) were 'unknown/unspecified' when a gender could not be identified, or the profile was organizational (Appendix 4). There was a statistically significant relationship between discourse and gender (Fisher's exact test,  $p < .05$ , ignoring unknowns,  $n = 590$ ). Both female and users with unspecified gender were statistically more likely to tweet about *Awareness & Advocacy* and *Personal Experience of MH/MI*, whereas there were no significant thematic differences in the content tweeted by males.

Most (73.6%) tweets in the sample expressed positive sentiment. Tweets with negative sentiment amounted for 17.5% of the total sample, whereas only 8.8% were neutral (Appendix 5). There was a statistically significant relationship between discourse and sentiment (Fisher's exact test,  $p < .001$ ,  $n = 1,023$ ). Tweets conveying negative sentiment were more common amongst posts about *Stigmatization* (156) and *Personal Experience of MH/MI* (39). Positive tweets were more likely to

be found for *Awareness & Advocacy* (401), *Personal Experience of MH/MI* (127) and *Fighting Stigma* (91), whereas neutral sentiment was mainly found in *Others* (39).

Across the total sample, 401 tweets mentioned a mental illness or disorder. Depression-related (e.g. postnatal depression) and anxiety-related (e.g. social anxiety) terms appeared more often than any other mental illness or disorder (189 mentions each), followed by suicide-related terms (e.g. suicide attempt) (85 mentions) (Appendix 6).

### ***Main dominant discourses***

Within our sample of 1,200 tweets we identified two dominant discourses of mental health: (1) mental health as a social issue, and (2) mental health as a personal issue. The first discourse includes four subthemes: *Awareness & Advocacy* (416 tweets); *Stigmatization* (160 tweets); *Fighting Stigma* (91 tweets); and *Politics of Health & Health Economics* (88 tweets). The second main discourse is represented by the subtheme of *Personal Experience of MH/MI* (175 tweets).

*Awareness & Advocacy*. The tweets analyzed were overall supportive and aware of mental health and related issues. The generally positive language on Twitter suggests that people were respectful and thoughtful when discussing mental health in general and about specific disorders during MHAW 2017 (e.g. Figure 1).

[insert Figure 1 about here]

*Be someone who's good for other people's mental health!*

*It's Mental Health Awareness Week. 1 in 4 in the UK experience mental health problems each year, let's get talking! @MindCharity #MHAW17*

*Please remember that your mental health is more important than your grades.*

*Stigmatization.* This negative discourse occurred despite the data being collected during a MHAW campaign. We identified most of the stigmatizing comments from the keywords ‘mental illness’ and ‘mental disorders’. Such comments included demeaning or judgmental language about mental health-related issues, downplaying the severity of the illness or medical condition, or associating mental illness with crime incidence. Most of these tweets focused on political figures, especially on Donald Trump, and political parties or ideologies (e.g. liberal, conservative) in which the posters equated having an opposite political view or religion to having a mental illness or disorder. Even though the discourse in this case departs from mental health issues and focuses on politics, it nonetheless trivializes mental illness, and those afflicted by it (Figure 2).

*Mental illness is very serious. Donald Trump needs help. Add narcissistic personality disorder to his list.*

*I won't rest until Liberalism is recognized and respected for the mental illness it is.*

*Practicing Islam is like having a mental health disorder.*

[insert Figure 2 about here]

Some tweets ascribed to this discourse contained misogynist and transphobic comments; these are indicative of not only issues of stigmatization about mental health, but the aggression and violence women and non-binary people are targeted with on social media.

*This is a clear image of the state of the mental illness epidemic in today's America known as 'women'*

*@KellyannePolls @HillaryClinton have they got a mental disorder?*

*Finished drinking water and just remembered: there are only 2 genders, the rest are mental disorders.*

*Fighting Stigma.* The anti-stigma discourse is related to the narrative of awareness and advocacy. Within our sample, the *Fighting Stigma* tweets protested against negative perceptions or stereotypes about mental health-related issues. Most of these tweets urges the public to challenge stigmatizing attitudes and discriminatory behavior towards people with mental illness and to be more understanding and knowledgeable of people's experiences; with some users also promoting specific hashtags, such as #SayNotoStigma (Figure 3).

[insert Figure 3 about here]

*Tremendous piece - When You Picture Someone with A Mental Illness, Picture Me In A Nice Tailored Suit* [http://m.huffingtonpost.com.au/osher-guensberg/when-you-picture-someone-with-a-mental-illness-picture-me-in-a\\_a\\_22082506/](http://m.huffingtonpost.com.au/osher-guensberg/when-you-picture-someone-with-a-mental-illness-picture-me-in-a_a_22082506/)

*People must educate themselves on mental illness, depression doesn't mean you're lazy!*  
#MHAW

*Be careful with what you say. People with mental disorders aren't "unhinged"*

*Politics of Health & Health Economics.* This discourse concerns the access to and effectiveness of mental health-care services as well as the allocation of public resources for these services, and the involvement of government, political figures and the healthcare private sector. Within this discourse, most tweets and hyperlinked content promote raising awareness and advocacy, going beyond reminding the public of MHAW-related events. Instead, the tweets promote a shift in the approach to tackle mental health by emphasizing the role socio-economic and health inequalities

and current public policies play in the incidence of mental health issues, as well as the right to access quality healthcare services (Figure 4).

*This week is #MHAW 2017. Learn more about how the conversation around #mentalhealth is changing <https://t.co/IoxFMl0PaF> via @mentalhealth.*

*Mental health disorders and addiction as a subset of that are under-funded and under-resourced. -@BDLushniak <https://t.co/G6CSnSJtFU>*

*Great article highlights main barriers to tackling children's mental health problems in schools @RogersHistory #MHAW <https://t.co/TefUi1QQbO>*

[insert Figure 4 about here]

*Personal Experience of Mental Health/Illness.* The discourse of mental health as a personal issue occurs from individuals that disclose their current and past experiences of mental health-related issues. Most self-disclosure posts engage in efforts to raise awareness, inform and educate the public about mental health as well as to counter stigmatizing attitudes. Few other posts showcase instances of lack of support and understanding on the part of Twitter users' family members, friends, teachers and employers. In some other tweets, the posters give details on their mental health concerns, their symptoms, struggles and triggers, and the impact having a mental illness has had on their lives; most of these tweets use a negative or pessimistic tone (with a handful containing suicidal comments).

*Since it's mental health awareness week, I spoke on my blog about my own mental health: <https://t.co/7Le9T3oZUT> #MHAW*

*Can't blame a person with mental illness, would you tell me to get over it after spending a day in my shoes?*

*When you got a mental illness and you are sad, the teachers are helpful, but once you exhibit any other signs of mental illness they become so rude*

*My chronic mental disorder isn't going away. Doesn't matter how much I talk about it or how aware others are of it #MHAW*

Along with the narrative of awareness, we also identified other positive accounts within *Personal experience of MH/MI*. These included tweets where the posters were 'reaching out to others' to offer information on coping strategies and share their mental health 'journey', with their personal stories of recovery and getting themselves better despite having a mental illness or disorder (Figure 5). Others also used a narrative of self-identification or feeling represented with the work of certain artists.

*So, my bipolar ass wrote this for #MHAW last year about finding the thing that helps when you're struggling #MHAW17 <https://t.co/vQRgdCNldg>*

*The love and respect I've been shown by this community has been key for my recovery #MHAW*

*Just listened to [song name] and I felt represented in my mental illness for the very first time.*

[insert Figure 5 about here]

## **Discussion**

### ***Main Findings***

Combining DA with CA, this study examined a random sample of 1,200 tweets posted during MHAW 2017. By looking at the hashtag #MHAW and the keywords 'mental health', 'mental illness', and 'mental disorders', our analysis revealed information about how Twitter users talk about mental health and mental illness. While our sample was generated during an awareness

campaign, due to the sensitivity of the topic we did not have a set expectation on the results. Previous research (e.g. Kolliakou et al., 2020; Pantic, 2014; Robinson et al., 2019) has shown that conversations on social media around mental health often provide spaces for anti-social behavior and the use of stigmatizing or demeaning language that could negatively affect the wellbeing of others, especially those most vulnerable users. A main finding of our analysis, however, is the overall positive discourse about mental health and related issues during MHAW 2017, as illustrated by the 884 tweets with a positive sentiment towards mental health. The discourse reproduced in many of the sampled tweets is that of *Awareness & Advocacy* ( $n = 416$ ), which indicates that the people exchanging information and engaging in conversations on social media, particularly Twitter, tend to be respectful and sensitive to mental health issues during MHAW.

Another two relevant findings are the discourses of *Fighting Stigma* ( $n = 91$ ) and *Politics of Health & Health Economics* ( $n = 88$ ). The former contained posts that explicitly used strong and supportive language to protest and counter negative stereotypes and attitudes towards mental illness. The latter mainly attempts to shift the rhetoric of mental healthcare being underbudget or inaccessible, and instead emphasizes the need for structural changes to combat socio-economic and health inequalities, which “requires political awareness and political struggle.” (Bambra et al., 2005, p. 188). Previous research (Berry et al., 2017; Dyson & Gorvin, 2017; Shepherd et al., 2015) has identified Twitter as site for protesting and campaigning about mental health, with the ultimate goal of developing greater empathy and political engagement. Arguably, these discourses could be representative of a specific community of people who are more likely to be politically engaged and knowledgeable about positive mental health language and therefore will be more likely to participate in an awareness campaign, as opposed to being representative of Twitter users.



Since mental health is a sensitive topic, known to spark polarized ideas and negative attitudes in both online and offline domains, we were unsurprised by the substantial volume of tweets that echoes society's discourse of mental illness *Stigmatization* ( $n = 160$ ). Stigma is often defined “as a feeling of being negatively differentiated owing to a particular condition, group membership, or state in life.” (Arboleda-Flórez & Stuart, 2012, p. 458), which is why stigmatizing views about people with mental illness is a form of social oppression underpinned by complex cultural and socio-political practices that reproduce power imbalances. In this respect, prior research has shown that media outlets (e.g. news, entertainment) contribute to perpetuate stereotypical portrayals of mental illnesses, associating these with dangerousness, violence and crime (Nawková et al., 2012; Stuart, 2006; Vengut Climent, 2018). The stigma discourse in our sample suggests that users' negative tweets are ideologically charged and revolve around socio-cultural practices (e.g. religious views, political affiliation, heteronormativity, misogyny) or time-sensitive news and offline events (e.g. Trump's administration) and not targeted at mental illness per se. It seems these users are using stigmatizing views of mental illness as a shorthand to dismiss any contrary opinion to theirs, as these are deemed ‘dangerous’, thus further perpetuating the stigmatization discourse.

Similar to previous research (Berry et al., 2017; Dyson & Gorvin, 2017; Lachmar et al., 2017; Wilson et al., 2014), the active use of Twitter to share *Personal Experiences of MH/MI* was evident in the posts ( $n = 175$ ), with the majority conveying a positive discourse; from efforts of raising awareness and fighting stigma to reaching out to other users and provide support and advice, or simply tell their recovery stories. These findings support prior evidence that Twitter seems to foster a ‘safe space’ for disclosing personal experiences of mental health, which may allow users to develop a sense of belonging or community identity (Berry et al., 2017; Dyson & Gorvin, 2017).

Another key finding is that nearly half of the users in our sample (47%) were from the general public (i.e. personal accounts without affiliation or professional information), some of which may be anonymous, allowing them to “adopt a disinhibited behavior with no responsibility or accountability.” (Gabarron et al., 2014, p. 6). This may explain why personal accounts were found likely to post more stigmatizing content. Anonymity may also help users share their opinions, personal experiences and information more freely, and even create loosely-tied support networks with people with similar experiences (Wilson et al., 2014) as evidenced by the many users with personal accounts posting about awareness and advocacy, and personal experiences of MH/MI. Similarly, a study based on Reddit posts found ‘throwaway’ accounts (temporary accounts created without identifiable information) to be six times more prevalent on mental health forums than on other Reddit forums (Pavalanathan & De Choudhury, 2015).

There were gender differences in the identified discourses within our sample; female users tweeted more about *Awareness & Advocacy* and *Personal Experience of MH/MI*, whereas there were no significant thematic differences amongst male users. Previous Twitter-based research has also shown women to be more prone to engage in mental health discourse than men (De Choudhury et al., 2017). Nevertheless, Schilichthorst et al. (2018) found that men and women were equally engaged with mental health discussions on Facebook, particularly about suicide, support and help-seeking.

Since we focused on English-language tweets and selected an awareness campaign hosted by a UK charity, it is unsurprising that the UK (31.7%) had the largest share of tweets. Additionally, disorders related to depression and anxiety were most frequently mentioned within our sample, which corresponds to previous evidence of depression and anxiety being found the most common

mental disorders, with nearly 8 percent of people meeting the diagnosis criteria in the UK (NICE, 2011), similar to the global population (WHO, 2019a).

Finally, the medical discourse was very rare within our sample; there were very few tweets about the prevention, treatment, and causes and symptoms of mental illness from a medical perspective or posted by healthcare professionals. Similarly, mental health-related information about research activities and the promotion of mental health resources was not often shared, neither did we find significant number of celebrities-related tweets about mental health issues.

### ***Strengths and Limitations***

There were some strengths and limitations to our study that should be considered for future research. First, our mixed-methods approach, combining discourse and content analyses to examine digitally-mediated *texts* was a significant strength in our study design. Although CA and DA are embedded in two different philosophical stances (i.e. positivist and constructivist, respectively), we argue that these methods complement each other as they are both concerned in examining the nature of social reality, particularly that of language; thus applying them together allows for a systematic and in-depth analysis of the dataset (blinded ref). Another strength was the adherence to ethical governance as we ensured that Twitter usernames were removed (except for public figures, organizations) and selected tweets were paraphrased. The interdisciplinary nature of our team fostered a creative collaboration and a study design that was methodologically and technologically thorough.

Access to Twitter is already restricted to a relatively small percentage of the global population and since our data was entirely collected from Twitter the discursive practices we identified might be specific to Twitter users; who are estimated to be mostly young people (in the UK, around 60% of

users are between the ages of 13 and 20, see Sloan et al., 2015). Arguably, the results reflect youth perceptions about mental health, however, our aim was not to generalize from our findings but to uncover the diversity of meaning-making language around mental health on Twitter. Since we focused on English-language tweets this excluded the discourses of mental health reproduced by individuals in other languages around the world. Also, the specific keywords and hashtag that we selected could have limited our results; using other keywords (e.g. ‘mental wellbeing’, ‘mental disease’) and hashtags (e.g. #MHMatters, #keeptalkingMH) might have yield different discourses. Ultimately, we acknowledge the vulnerability of our interpretation due to researcher bias; discourse analysis however recognizes the researcher plays an active role on data analysis and thus accepts that this exemplifies only one of many ways in which the data could have been interpreted (Willig, 2013 cited in Dyson & Gorvin, 2017, p. 789).

Researchers studying social media phenomena, and particularly aiming for a critical examination of ‘public’ dominant discourses, should always keep in mind the gap between the online and offline domains, and the differences between public interests and interests of publics (Dehghan & Mohd Ali, 2015). Therefore, future research on digitally-mediated mental health discourse could complement and advance the present findings by including data from other social media sites (e.g. Instagram, Facebook) disseminated during mental health awareness campaigns and using other forms of data collection such as in-depth interviews and photo-diaries.

## **Conclusion**

Our analysis of 1,200 random tweets retrieved during MHAW offers a better understanding of the increasingly positive discourse around mental health and its reconceptualization on Twitter. However, we have also observed offline socio-cultural practices of stigmatization of mental illness

being reproduced on Twitter, so awareness campaigns need to expand the reach of their message. The current conversation on Twitter is rather *personal* so there is an opportunity for health professionals/organizations to join the conversation. Since the category ‘celebrities’ did not originate any relevant discourse; organizations may want to consider strategically collaborating with celebrities/influencers to positively guide the discussion in future awareness campaigns in social media. While contributing to the emerging literature on Twitter discourse, our results may also benefit mental health promotion and advocacy activists and organizations by providing evidence about raising awareness and counter stigmatizing discourses.

### **Authors’ contribution**

MM conceptualized the study; led data collection/management, coding, analysis and interpretation; wrote and edited the article, and prepared figures/tables. AMB contributed to coding, conducting descriptive statistics, editing tables, writing and editing of the article. SM contributed to data collection, prepared figures and reviewed drafts of the article. MT conducted statistical tests and reviewed drafts of the article. All authors critically reviewed and approved the final version of the article.

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The authors declared no conflicts of interest with respect to the research, authorship, and/or publication of this article.

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**Table 1.** Final Sample

Keyword	Tweets collected	Tweets analyzed
Mental Health	75,856	300
Mental Illness	21,418	300
Mental disorders (+severe mental disorders)	1,782	300
#MHAW	978	300
Total	100,034	1,200

**Table 2.** Discourse Coding Framework

Main category	Brief descriptions of sub-categories
<i>Mental health/illness as a medical condition</i>	<p>1. <i>Prevention</i>. Statements about lifestyle changes linked to MH; relevance of preventing measures.</p> <p>2. <i>Treatment</i>. Statements about MI/MD recovery treatment, programs, therapy and medication. Including, but no limited to, mentions of trials results.</p> <p>3. <i>Causes, Symptoms &amp; Consequences</i>. Statements mentioning causes, symptoms, effects and consequences of MI/MD</p>
<i>Mental health as a social issue</i>	<p>4. <i>Stigmatization</i>. Statements that depict MH issues and/or people with MH issues negatively, or trivialize, criminalize, disregard MH, or compare MH/MI to other social issues (e.g. bigotry, racism) or public figures (e.g. Trump).</p> <p>5. <i>Fighting stigma</i>. Statements that counter stereotypes/misrepresentations of MI or highlight the way people with MH conditions are portrayed by the media and general public.</p> <p>6. <i>Awareness &amp; Advocacy</i>. Statements of encouragement and support for people with MH issues; social responsibility statements shading light to wrong doings and social issues.</p> <p>7. <i>Health Politics &amp; Health Economics</i>. Statements relating to not only government's MH agenda or MH policies, lack of funding, use of public resources, but also issues relating to social inequalities and human rights causes.</p> <p>8. <i>Celebrity</i>. Tweets about celebrity's endorsement of MH awareness or supporting a charity. This category can also include celebrities' negative associations to MH/MI.</p>
<i>Mental health/illness as a personal issue</i>	<p>9. <i>Personal experience of MI/MD</i>. Personal statements of living-experience with MH issues.</p> <p>10. <i>Family/friends experience of MI/MD</i>. Statements about the experience with mental health issues of a relative or friend.</p>
<i>Mental health/illness as information</i>	<p>11. <i>Research activities</i>. Tweets about calls for participants, funding, promotion of research, etc.</p> <p>12. <i>Health professionals</i>. Statements referring to MH professionals' shortage, low paid, lack of training, receiving an award, being praised/acknowledged or being under scrutiny.</p> <p>13. <i>Promotion of mental health resources</i>. This includes news sections, websites, toolkits, webinars, courses or any other mental health-related resource.</p> <p>14. <i>Job ads</i>. Tweets publicizing a job post in MH.</p>
<i>Other</i>	<p>15. <i>Other</i>. A statement that does not fit any of the above.</p>